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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,224	11/08/2001	Frank Kopf	1813	5567

7590 08/02/2004  
Striker Striker & Stenby  
103 East Neck Road  
Huntington, NY 11743

EXAMINER

FLANDRO, RYAN M

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/009,224

Applicant(s)

KOPF, FRANK

Examiner

Ryan M Flandro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13, 14, 16, 17 and 19-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13, 14, 16, 17 and 19-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### *Continued Examination Under 37 CFR 1.114*

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 June 2004 has been entered.

#### *Specification*

3. Applicant's amendment to the specification submitted 24 June 2004 is acceptable.

#### *Claim Rejections - 35 USC § 102*

4. Claims 13, 14, 16, 17, 19, 20 and 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Delf et al (US 2,773,365) (Delf).
  - a. Claim 13. Delf clearly shows and discloses a device for securing an add-on part **14/SA** (see column 2 lines 32-36) to a substantially smooth drive shaft **S** (see figure 1; column 2 lines 13-15), having a slaving element **10**, which is seated in a manner fixed against relative rotation on the drive shaft **S** and transmits a rotary motion from the drive shaft **S** to the add-on part **14/SA**, and having a spring element (**comprised of elements**

**37, 25 and 36**), which axially secures the add-on part **14/SA** on the drive shaft **S**, characterized in that the slaving element **10** penetrates the add-on part **14/SA**, and the spring element **37/25/36** is braced directly on the slaving element **10** (**@40**) and on the add-on part **14/SA** and thus axially fixes the add-on part **14/SA** on the drive shaft **S** (see figures 1-3; see generally columns 2-4).

b. Claim 14. Delf further shows and discloses the add-on part **14/SA** is clamped between the spring element **37/25/36** and a portion of the slaving element **10** (see figures 2 and 3).

c. Claim 16. Delf also shows the slaving element **10** has a collarlike widening **40**, on which the spring element **37/25/36** is braced (see figures 2 and 3).

d. Claim 17. Delf also shows that the add-on part **14/SA** has recesses **16** through which the slaving element **10** can be passed with its collarlike widening **40** (see especially figure 2).

e. Claim 19. Delf further shows and discloses that the slaving element **10** has a platelike widening **15** of its diameter, at which the add-on part **14/SA** is braced (via elements **21** and **35**) (see figures 2 and 3).

f. Claim 20. Delf also shows and discloses that in the platelike widening **15**, the slaving element **10** has recesses (**backside of lugs 17**) corresponding to the location of the collarlike widening **40** (see figure 2).

g. Claim 22. Delf also shows and discloses that the spring element **37/25/36** is secured on the add-on part **14/SA** against later twisting by means of a positioning pin (portion of **36** inserted into **32**) (see figures 2 and 3).

- h. Claim 23. Delf further shows and discloses that the add-on part **14/SA** to be secured is a vane wheel of a fan (see figures 1 and 2; column 1 lines 15-23 and column 2 lines 21-36).
- i. Claim 24. Delf shows the slaving element **14/SA** press-fitted onto the drive shaft **S** (see figures 1 and 2).
- j. Claim 25. Delf clearly shows and discloses a device for securing an add-on part **14/SA** (see column 2 lines 32-36) to a substantially smooth drive shaft **S** (see figure 1; column 2 lines 13-15), having a slaving element **10**, which is seated in a manner fixed against relative rotation on the drive shaft **S** and transmits a rotary motion from the drive shaft **S** to the add-on part **14/SA**, and having a spring element **37/25/36**, which axially secures the add-on part **14/SA** on the drive shaft **S**, characterized in that the slaving element **10** penetrates the add-on part **14/SA**, and the spring element **37/25/36** is braced on the slaving element **10** (**@40**) and on the add-on part **14/SA** and thus axially fixes the add-on part **14/SA** on the drive shaft **S**, and also directly abuts against the slaving element **10** and against the add-on part **14/SA** (see figures 1-3; see generally columns 2-4).

*Claim Rejections - 35 USC § 103*

5. Claims 21, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delf, as applied above, in view of Savage.

- a. Claim 21. Delf lacks disclosure of the spring element **37/25/36** being a circular cup spring that is open on one side. Savage, however, teaches spring element **46** being a circular cup spring that is open on one side to provide compressive axial loading in a fan

blade assembly (see figure 1 – the spring element of Savage is actually open on two sides because an aperture runs through the middle of the spring; see also column 2 line 65).

Inasmuch as the references (Delf and Savage) disclose these elements as art recognized equivalents, it would have been obvious to one of ordinary skill in the art to substitute one for the other. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982).

b. Claim 26. Delf, as applied above, includes each limitation recited in claim 26 except that the spring element is embodied in one piece. Savage, however, teaches spring element 46 being a one piece circular cup spring that is open on one side to provide compressive axial loading in a fan blade assembly (see figure 1 – the spring element of Savage is actually open on two sides because an aperture runs through the middle of the spring; see also column 2 line 65). Both Delf and Savage teach the respective spring elements as a means to dampen vibration and bias the add-on parts away from the end of the shaft. Inasmuch as the references (Delf and Savage) disclose these elements as art recognized equivalents, it would have been obvious to one of ordinary skill in the art to substitute one for the other. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982). Moreover, one-piece construction, in place of separate elements fastened together, has been held to be an obvious variation within the skill of the art. In re Kohno, 391 F.2d 959, 157 USPQ 275 (CCPA 1968); In re Larson, 340 F.2d 965, 144 USPQ 347 (CCPA 1965).

c. Claim 27. Delf, as applied above, shows and discloses each limitation recited in claim 27 except for the add-on part having positive form-locking engagement with the slaving element such that the add-on part positively interlocks with the slaving element in

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direct contact with the slaving element and embraces it. Savage, however, teaches the slaving element **26** being in positive form-locking engagement with the add-on part **14** (see figure 1 – surfaces **18**, **14a**, **14b** and projection **22** in hole **24**) such that the add-on part **14** positively interlocks with the slaving element **26** in direct contact with the slaving element **26** and embraces it (figure 1; columns 1-3). Savage teaches such a construction as being essential for effective vertical rectitude control of the add-on part **14** (see column 2 lines 45-51). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Delf such that the slaving element is positively interlocked with the add-on part to provide effective vertical rectitude control as taught by Savage.

### *Response to Arguments*

7. Applicant's arguments filed 24 June 2004 have been fully considered but they are not persuasive.

a. First, Applicant argues that Delf does not disclose any spring element and specifically that elements 37, 25 and 36 of Delf do not form a spring element. The Examiner respectfully disagrees. Delf explicitly shows and discloses that element **36** is a “resilient, cushioning and vibration absorbent disc” (see column 3 lines 3-4). Element **37** is a washer and Element **25** is simply a cup disc that serves to house the resilient element **36** to prevent “peripheral extrusion or spread” of such elements that might result in an out-of-balance condition (see column 2 lines 15-18 and column 3 lines 9-16). Under the Examiner’s reasonably broad interpretation, these elements, when considered together,

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function as a "spring element" and therefore meet the limitations of the claim. Therefore, the "spring element" (comprising elements 36,25,37) does in fact brace against the slaving element **13** (at **40**) and against the add-on part **14/SA** as recited in the various claims.

Applicant's additional argument that this amounts to "hindsight" is unperuasive and also inapplicable to at least claims 13, 14, 16, 17, 19, 20 and 22-25 because hindsight is not relevant to prior art that anticipates under section 102.

b. Second, Applicant's amendment reciting a "one-piece spring element" in claim 26 is sufficient to overcome an anticipation rejection under Delf alone, but is not considered allowable in view of Savage as set forth above in paragraph 6b.

c. Lastly, Applicant's amendment reciting a "positive form-locking engagement" between the add-on part and the slaving element is sufficient to overcome an anticipation rejection under Delf alone, but is not considered allowable in view of Savage as set forth above in paragraph 6c.

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to hub to shaft connections:

U.S. Patent 3,869,157 to Jolette (see figures 2 and 5)

U.S. Patent 3,708,999 to Beehler (see figure 3)

U.S. Patent 3,409,489 to Renton (see figures 1 and 8)



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U.S. Patent 3,084,963 to Beehler (see figure 4)

U.S. Patent 3,005,497 to Klonoski et al (see figure 2)


German Patent Publication DE 3339075 A1 to Brandt (see figure)

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan M Flandro whose telephone number is (703) 305-6952. The examiner can normally be reached on 8:30am - 5:30pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703) 308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*RMF*  
RMF  
July 23, 2004

  
John A. Cunningham  
Patent Examiner